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REMARKS

Claims 1-30 are rejected under 35 U.S.C. § as being unpatentable over Acres et al., of record, in view of Creating One Industry Standard for Manufactures of Electronic Games of Chance ("Creating One Industry Standard"), of record, and Universal Serial Bus ("USB"), newly cited. In support of the rejection, the examiner contends that Acres et al. discloses all of the claimed subject matter except for the specific interconnection scheme utilizing no more than four wires and arrangement of the nodes so as to provide an MxN-bit shift register. However, the examiner contends that it would have been obvious to substitute for the Ethernet connection of Acres et al. the four-line connection disclosed at page 6 of USB, and that one would be motivated to do so because it would help in setting an industry standard, as discussed in Creating One Industry Standard. The examiner further contends that it would have been obvious to include the claimed MxN-bit shift registers because bit shift registers are well known. The rejection is respectfully traversed.

A significant aspect of applicants' invention is the provision of a gaming system which includes a three- or four-line or wire interconnection among a host controller and a plurality of local controllers, wherein the wires provide power to the local controllers as well as transmitting data from the host controller to the local controllers and/or from the local controllers to the host controller. The interconnection may utilize three wires or four wires, depending upon the nature of the devices being controlled. In the case of lamps, only three wires are necessary, whereas in the case of switches, the state of which must be monitored, a fourth return line is utilized. In order to clarify this point, claim 1 has been amended to be directed to the three-wire arrangement, whereas claim 5 describes the arrangement utilizing the fourth return line.

Another important aspect of the invention is that it is a unidirectional communication system. In the three-wire arrangement signaling is in one direction from the host controller to the local controllers in a string, i.e., communication is from one end of the string to the other in a single direction. In the four-wire arrangement a return or loop wire connects the distal end of the string back to the host controller, but again communication is in only one direction along the string. In order to clarify this point, each of the independent claims 1, 5, 13, 24 and 31 has been amended to specify "unidirectional" communication along a string.

The elements of the Acres et al. system are connected over an industry standard Ethernet network (col. 7, lines 45-49). That network does not supply power and ground to the devices on the network, nor is there any need to provide power or ground to the control devices of the Acres et al. network, since the devices are gaming machines, each of which will be powered locally. In applicants' disclosed invention, on the other hand, the provision of power and ground connections to each of the accessed devices is important, since these devices may be devices such as switches or lamps within an individual gaming machine.

The examiner acknowledges this deficiency in Acres et al., but contends that it is supplied by the secondary references, in particular the four-line connection disclosed at page 6 of USB. However, the USB signaling arrangement is quite different from that set forth in applicants' claims. In particular the claimed signaling arrangement is "unidirectional," wherein the data is communicated only along a single "data line," continuing along the "return line" if the loop back to the host controller is closed. In USB, on the other hand, the signaling is half duplex along a twisted pair of data cables

labeled D+ and D-, both of which are essential for signaling. Thus, when one wire is at a high logic state the other is at low logic state, and vice versa. Therefore, even assuming that one would be led, as the examiner suggests, to attempt to substitute the USB connection arrangement for the Ethernet arrangement of Acres et al., it would not result in the invention recited in applicants' amended claims. Accordingly, for this reason it is believed that each of the independent claims and the claims dependent thereon patentably distinguish from the cited art.

Another significant aspect of applicants' invention is that it is a position-based system rather than an addressable system. In other words, each of the "plurality of devices" to be individually accessed corresponds to a particular position in a shift register formed by the local controllers, and each one of those positions contains a single bit from the host controller. Thus, the particular device which will be controlled by any particular bit of data of the data stream is governed by that bit's position in the shift register after the data word is loaded into the shift register. In the Ethernet connection of Acres et al., particular devices in the network are designated by addresses assigned to those devices. This distinguishing feature is spelled out in claims 13, 24 and 31, which clarify that the host controller produces at its data out terminal an output signal comprising a serial digital data stream including MxN bits, so that the bits are sequentially loaded into and respectively fill the positions of the (MxN)-bit register (claims 13 and 24), or to specify transmitting to the local controllers a serial digital data message including MxN bits "so that the MxN bits respectively occupy the MxN positions of the shift register" (claim 31).

With respect to this feature, the examiner simply contends that "bit shift registers have been known since the birth of computers," citing U.S. Patent No. 3,582,071 to Grosvenor, et al. as an example, concluding that "it would have been a matter of routine to one of ordinary skill in the art to include the MxN bit shift registers in the device of Acres et al. . . . in order to perform the essential functions of a network." However, the fact that shift registers, *per se*, are known, is beside the point. The examiner has offered no reason why one of ordinary skill in the art would attempt to utilize the shift registers of Grosvenor, et al. in the Acres et al. device. Indeed, unidirectional communication through a shift register would seem to be completely incompatible with the addressable signaling system utilized by Acres et al.

Additionally, it is noted that each of the independent claims 13, 24 and 31 specifies an arrangement wherein each node in the string includes "up to M of the devices," the nodes being interconnected so that "the string of nodes provides a (MxN)-bit shift register." No such arrangement is disclosed or suggested by Grosvenor, et al., which discloses a bowling scoring system wherein a 10-bit shift register has positions corresponding to the pin positions. The patent gives an example of a four-lane or alley arrangement. However, only a simple 10-bit shift register (FIG. 7) is provided and it counts the pins on only a single one of the four lanes at a time. Grosvenor does not provide four 10-bit registers. Furthermore, even if four registers were provided they would clearly NOT be arranged in a string to provide a 4x10-bit shift register. Indeed, such an arrangement would make no sense, since the lanes or alleys are operated independently of each other. Thus, for this reason also, it is believed that each of the

claims 13, 24 and 31 and the claims dependent thereon are clearly patentable over the cited art.

For all of the foregoing reasons, it is submitted that, as amended herein, claims 1-36 are now in condition for allowance and the allowance thereof is respectfully asked.

Respectfully submitted,

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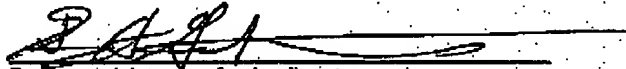


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